

## Treatment Response and Disease Characteristics in Non-Small Cell Lung Cancer (NSCLC) Patients Receiving Pemetrexed-Based Therapy

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### ABSTRACT

Non-small cell lung cancer (NSCLC) is the primary lung cancer. In this condition, the initiation of cancerous cells within the tissues of the lungs involves. NSCLC exhibits a comparatively slow growth rate in comparison to small cell lung cancer (SCLC). However, it frequently spreads to other regions of the body by the time it is detected. Therefore, timely identification and therapy are crucial. Moreover, at the metastatic stage of the NSCLC, a combination of drugs was administered as treatment. Pemetrexed was often used in combination with atezolizumab or carboplatin. Consequently, in the present study, pemetrexed uptake in the 19 individuals was analyzed. Here, 13 males and 6 females were analyzed on the basis of type of cancer, grade of disease, gender, molecular factor, and risk factors. Adenocarcinoma was discovered to be the most common type of cancer among the 12 patients who participated in our study, with 10 of those patients having a Grade 2 disease. Our study showed that the EGFR molecular marker was the most prevalent among the 5 cases. In the context of the patient's condition, eleven individuals were classified as having an ECOG1 status, and the RECIST criteria indicated a favorable response rate of sixty-three percent for both partial and complete responses to pemetrexed treatment. In older adults, specifically those aged 60 and older, a disturbing pattern was observed: they displayed an increased incidence of metastases in various areas. Moreover, smoking impacted individuals within this age group, particularly those diagnosed with adenocarcinoma and squamous cell carcinoma. Overall, the study signifies the role of age and lifestyle factors, including smoking, in NSCLC progression and in response to treatment, as well as the efficacy of pemetrexed in combination with other drugs, primarily for particular patient demographics and disease grades, providing guidance for customized therapy strategies..

**Keywords:** Carcinoma; Non-Small-Cell Lung; Lung Neoplasms; Pemetrexed; Carboplatin.

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